DYEABILITY PROPERTIES OF NATURAL AND SYNTHETIC FABRICS USING CAROTENOID PIGMENT IN YELLOW BELLS FLOWER

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ABSTRACT

DYEABILITY PROPERTIES OF NATURAL AND SYNTHETIC FABRICS USING CAROTENOID PIGMENT IN YELLOW BELLS FLOWER

Yellow Bells flower or *Tecoma stans (L.) Juss. ex Kunth* belongs to family *Bignoniaceae* produces natural dye attributed by compounds called carotenoids which are split into two classes, xanthophylls (yellow) and carotenes (red/orange). In this study an open-boiling extraction method was applied in order to extract carotenoids pigment from Yellow Bells flower. Determination of carotenoid pigment in Yellow Bells flowers was done by using UV/Vis spectrophotometer and compared the result to reference standards from previous studies. It is anticipated that xanthophyll, the yellow pigment in carotenoids group is responsible to the yellow color in Yellow Bells flowers. Dyeability of different fabrics (natural & synthetic fabric) and suitability of different mordants (metallic & natural mordant) by using natural dye from Yellow Bells flowers has been studied. Natural fabric which is silk (protein-based) is the best taking natural dye followed by cotton (cellulose-based). The most resistant to take dye is synthetic fabric which is polyester. However, polyester fabric tends to absorb more dye at higher temperature. Metallic mordant such as alum is the most suitable mordant in dyeing fabrics which give deeper and even color of shades to the fabrics compared to natural mordant such as wood ash (basic mordant) and tamarind (acidic mordant). The result showed that wood ash and tamarind work well only with silk fabrics. The relationships between the natural dye, the fabrics and the mordants were also investigated.